## AMENDMENTS TO THE SPECIFICATION

**Please amend the paragraph starting on page 1, line 22 as follows:**

In recent years, a solid ball has been a mainstream in place of the wound ball. The solid ball comprises a solid core having a single layer or a plurality of layers, and a cover. A compression molding method or an injection molding method can be employed for molding the cover. In general, the injection molding method having ~~an~~ excellent mass productivity is employed.

**Please amend the paragraph starting on page 1, line 29 as follows:**

In the injection molding method, first of all, a core is held on the center of a spherical cavity with a holding pin. Next, a molten thermoplastic resin composition is injected into a clearance between a cavity surface and the core. In the final stage of the injection, the holding pin is moved backward. In some cases, therefore, the core is moved from the center with the flow of the resin composition. Due to ~~the~~ movement, the thickness of a cover becomes unequal. In some cases, a cover having an unequal thickness is molded due to the deformation of the core which is caused by ~~an~~ injection pressure. The unequal thickness of the cover causes the physical properties of ~~a~~ the golf ball to be nonuniform. In a golf ball having a small nominal thickness of the cover, particularly, the ~~unequality~~ inequality of the thickness of the cover, seriously affects the physical properties of the golf ball. ~~In~~ With respect ~~of~~ to the uniformity of the golf ball, the injection molding method has limitations.

**Please amend the paragraph starting on page 2, line 6 as follows:**

If the solid ball is manufactured by the compression molding method, the ~~unequality~~ inequality of the thickness of the cover is caused with difficulty. In the case in which the solid ball is to be formed by the compression molding method, however, a part of the air present between a solid core and a half shell is apt to remain in ~~a~~ the cover material. The reason is that the solid core has no space which is seen in a wound core. In the compression molding method, the cover material excessively flows out so that the clearance between a cavity surface and the core is insufficiently filled in some cases. This phenomenon is referred to as bare. In the case in which a cover having a small nominal thickness is to be molded, the air residue and the bare are apt to be generated.

**Please amend the paragraph starting on page 1, line 22 as follows:**

It is an object of the present invention to provide a method of manufacturing a golf ball in which ~~a~~ the defect rate is reduced. The method of manufacturing a golf ball according to the present invention comprises the following steps:

(1) a first step of forming a bowl-shaped half shell from thermoplastic resin composition;

(2) a second step of putting two half shells and a solid core covered with the half shells in a mold including upper and lower portions, each of which has a hemispherical cavity, in a state in which the mold is opened;

(3) a third step of clamping the mold;

(4) a fourth step of heating the thermoplastic resin composition in a spherical cavity formed by the mold clamping and pressurizing the thermoplastic resin composition at a pressure of 5 kgf/cm$^2$ to 50 kgf/cm$^2$, and causing the excessive thermoplastic resin composition to flow out of the spherical cavity; and

(5) a fifth step of heating the thermoplastic resin composition in the spherical cavity and pressurizing the thermoplastic resin composition at a pressure of 70 kgf/cm$^2$ or more, and forming a cover.

**Please amend the paragraph starting on page 3, line 4 as follows:**

In the method of manufacturing a golf ball, ~~a~~the total volume of the two half shells ~~put at~~ in the second step is set to be 105% to 120% of a volume of the cover.

**Please amend the paragraph starting on page 3, line 12 as follows:**

It is preferable that a difference (T2 – Ts) between the highest temperature T2 of the mold and a softening point Ts of the thermoplastic resin composition through the fourth and fifth steps should be set to be 30°C to 80°C. In this manufacturing method, ~~a~~ the defect rate can be more reduced.

**Please amend the paragraph starting on page 4, line 15 as follows:**

The golf ball 1 has a diameter of 40 mm to 45 mm, ~~and furthermore,~~ preferably 42 mm to 44 mm. In consideration of a reduction in ~~an~~ the air resistance within such a range that the

standards of the United States Golf Association (USGA) are satisfied, it is particularly preferable that the diameter should be 42.67 mm to 42.80 mm. The golf ball 1 has a weight of 40g to 50g, ~~and furthermore,~~ preferably 44g to 47g. In consideration of an enhancement in ~~an~~ the inertia within such a range that the standards of the USGA are satisfied, it is particularly preferable that the weight should be 45.00 g to 45.93 g.

**Please amend the paragraph starting on page 4, line 25 as follows:**

Fig. 2 is a sectional view showing a part of a mold 6 to be used for manufacturing the golf ball 1 in Fig. 1. The mold 6 comprises an upper portion 7 and a lower portion 8. Each of the upper portion 7 and the lower portion 8 includes a large number of cavity surfaces 9, and a hemispherical cavity is formed by the cavity surface 9. The upper portion 7 and the lower portion 8 are mated together to form a spherical cavity. A large number of projections are formed on the cavity surface 9, which is not shown. The ~~dimple~~ dimples 4 ~~is~~ are formed by the ~~projection~~ projections as will be described below.

**Please amend the paragraph starting on page 4, line 35 as follows:**

Fig. 3 is a flow chart showing an example of a method of manufacturing the golf ball 1 in Fig. 1. In this manufacturing method, first of all, a base rubber, a crosslinking agent and various additives are kneaded so that a rubber composition is obtained (STP1). Next, the rubber composition is put in a mold (not shown) having an upper portion and a lower portion and having a spherical cavity (STP2). Then, the mold is clamped (STP3). Thereafter, the rubber

composition is heated through the mold. By the heating, a rubber causes a crosslinking reaction (STP4). The rubber composition is cured by the crosslinking so that the spherical solid core 2 is obtained. By adjusting ~~a~~ the time required for the heating and ~~a~~ the temperature, the core may be brought into a semicrosslinking state. A core in an uncrosslinking state may be prepared. A core having two layers or more may be prepared.

**Please amend the paragraph starting on page 5, line 13 as follows:**

On the other hand, a thermoplastic resin and various additives are blended so that a resin composition is obtained (STP5). Next, the resin composition is put ~~in~~ into an injection molding machine (STP6). The resin composition is heated in the cylinder of the injection molding machine and is molten (STP7). Then, the molten resin composition is injected into a mold (not shown) (STP8). The mold includes an upper portion having a convex portion and a lower portion having a concave portion. The resin composition is filled in a clearance between the convex portion and the concave portion. Thus, a half shell 10 (see Fig. 2) is obtained. The half shell 10 takes the shape of a bowl.

**Please amend the paragraph starting on page 5, line 29 as follows:**

Subsequently, the lower portion 8 is gradually lifted so that the mold 6 is clamped (STP11). The mold clamping is carried out by a press machine. By the mold clamping, the half shell 10 (that is, the thermoplastic resin composition) is pressurized (STP12). The pressure is comparatively low. Simultaneously with the mold clamping, the temperature of the mold 6 is gradually raised so that the resin composition is heated through the mold 6 (STP13). By the

heating, the resin composition ~~is~~ becomes molten and flows. The ~~excessive~~ excess resin composition flows out of the spherical cavity ~~by~~ due to the pressurization. The flow is carried out through a very small clearance between the upper portion 7 and the lower portion 8. At the same time, air present between the half shell 10 and the cavity surface 9 and air present between the half shell 10 and the core 2 are discharged from the spherical cavity.

**Please amend the paragraph starting on page 6, line 8 as follows:**

Then, a mold clamping pressure is raised so that the resin composition is pressurized at a high pressure (STP14). By the pressurization at the high pressure, the upper portion 7 abuts on the lower portion 8 almost completely. Subsequently, the ~~flowage~~ flow of the resin composition is ~~therefore caused~~ rarely caused. By the pressurization at the high pressure (STP14), the resin composition takes a shape in conformity with the cavity ~~surface~~ surfaces 9. In other words, the ~~dimple~~ dimples 4 having ~~a~~ the shape obtained by ~~inverting~~ inverted ~~the shape of a projection~~ projections, is formed.

**Please amend the paragraph starting on page 6, line 17 as follows:**

The temperature of the mold 6 is gradually reduced with ~~a~~ the high mold clamping pressure being maintained (STP15). In a stage in which the temperature is ~~sufficiently~~ substantially lowered, the mold 6 is opened (STP16) and the golf ball 1 is ~~taken out~~ removed (STP17).

**Please amend the paragraph starting on page 6, line 21 as follows:**

In this manufacturing method, the air in the spherical cavity is sufficiently discharged at the low pressurizing step (STP12). Accordingly, ~~such~~ a defect ~~that~~ where the residual air enters the cover 3 is seldom caused ~~with difficulty~~. By ~~the pressurization~~ pressurizing at a low pressure, the ~~excessive flowage~~ excess flow of the resin composition is suppressed. Therefore, the bare is caused with difficulty. In this manufacturing method, ~~a~~ the defect rate is low.

**Please amend the paragraph starting on page 6, line 28 as follows:**

The pressure at the low pressurizing step (STP12) is set to be 5 kgf/cm$^2$ to 50 kgf/cm$^2$. In some cases in which the pressure is less than ~~the~~ this range, the air between the half shell 10 and the core 2 is not sufficiently discharged. From this viewpoint, it is more preferable that the pressure should be 10 kgf/cm$^2$ or more and is particularly preferable that the pressure should be 20 kgf/cm$^2$ or more. In some cases in which the pressure exceeds the range, the ~~excessive~~ excess resin composition flows out. In addition, in some cases in which the pressure exceeds the range, the resin composition intensively flows out in a specific direction so that ~~the~~ a cover 3 having an unequal thickness is molded. From this viewpoint, it is more preferable that the pressure should be 40 kgf/cm$^2$ or less.

**Please amend the paragraph starting on page 7, line 5 as follows:**

The pressure at the high pressurizing step (STP14) is set to be 70 kgf/cm$^2$ or more. In some cases in which the pressure is less than the range, the resin composition ~~excessively~~ excess

flows out of the spherical cavity so that the bare is caused. From this viewpoint, it is more preferable that the pressure should be 80 kgf/cm$^2$ or more and is particularly preferable that the pressure should be 90 kgf/cm$^2$ or more. A large-scaled press machine is required for obtaining a very high pressure, ~~and the~~ although an excessive pressure can ~~damages~~ damage the mold 6. Therefore, the pressure is usually set to be 120 kgf/cm$^2$ or less.

**Please amend the paragraph starting on page 7, line 15 as follows:**

A percentage ((Vh/Vc) * 100) of ~~a~~ the total volume Vh of the two half shells 10 put in the mold 6 (STP10) to ~~a~~ the volume Vc of the cover 3 is set to be 105% to 120%. In other words, 5% to 20% of the resin composition flows out of the spherical cavity. ~~The~~ This amount of ~~the~~ flowage is smaller than that ~~of a flowage~~ in ~~a~~ conventional golf ball manufacturing ~~method~~ methods. In some cases in which the ~~percentge~~ percentage is less than ~~the~~ this range, it is hard to control the amount of ~~the~~ flowage. From this viewpoint, it is more preferable that the percentage should be 107% or more. In some cases in which the percentage exceeds ~~the~~ this range, the core 2 is moved with the flow of a large amount of the resin composition so that the cover 3 having an unequal thickness is molded. From this viewpoint, it is more preferable that the percentage should be 115% or less.

**Please amend the paragraph starting on page 7, line 29 as follows:**

Fig. 4 is a graph showing ~~a~~ the change in the temperature of the mold 6 in the manufacturing method of Fig. 3. The graph shows ~~a~~ the temperature obtained while the resin

composition is heated at low and high pressures, that is, from mold clamping (STP11) to mold opening (STP16). In the graph, ~~the~~ reference numeral T1 denotes the temperature of the mold 6 when pressurization at a low pressure is started. The reference numeral T2 denotes the highest temperature of the mold 6. As is apparent from Fig. 4, a time taken from the start of the pressurization at a low pressure to arrival at the highest temperature T2 is approximately 3 minutes in this example. In this example, the pressurization at ~~a~~ high pressure is started after approximately 3 minutes ~~since the pressurization at the low pressure is started~~. In other words, switching from the low pressure to the high pressure is carried out almost simultaneously with the arrival of the mold 6 at the highest temperature T2.

**Please amend the paragraph starting on page 8, line 10 as follows:**

It is preferable that a difference (T2 – Ts) between the highest temperature T2 and a softening point Ts of the thermoplastic ~~resin~~ resinous composition should be 30°C to 80°C. If the difference (T2 – Ts) is less than ~~the~~ this range, a defect is apt to be caused by the residual air. From this viewpoint, it is more preferable that the difference (T2 – Ts) should be 40°C or more. If the difference (T2 – Ts) exceeds ~~the~~ this range, the bare is easily caused by the ~~excessive flowage~~ excess flow of the ~~resin~~ resinous composition. From this viewpoint, it is more preferable that the difference (T2 – Ts) should be 70°C or less. The softening point Ts is measured by a thermomechanical analysis apparatus (a trade name of "TMA-50" manufactured by SHIMADZU CORPORATION). In the measurement, a load of 30gf is applied to a needle to come in contact with the ~~resin~~ resinous composition. The displacement of a needle is read when

the temperature of the ~~resin~~ resinous composition is gradually raised from an ordinary temperature. The intersecting point of tangents of peak is determined from the graph for the amount of the displacement and the temperature. The temperature on the intersecting point is represented as the softening point Ts.

**Please amend the paragraph starting on page 8, line 30 as follows:**

It is preferable that the timing of a the transition from the pressurization at a low pressure (STP12) to the pressurization at a high pressure (STP14) should be set to be within a period of 30 seconds before and after the mold 6 reaches the highest temperature T2. Consequently, the air residue and the bare can be suppressed still more. From this viewpoint, it is more preferable that the timing of the transition should be set to be within a period of 20 seconds before and after the mold 6 reaches the highest temperature T2.

**Please amend the paragraph starting on page 9, line 3 as follows:**

It is preferable that a difference (Ts – T1) between the softening point Ts and the temperature T1 of the mold 6 at the time of ~~start of~~ starting the low pressurizing step (STP12) should be 15°C or more. In other words, it is preferable that the temperature T1 should be much lower than the softening point Ts. Consequently, the ~~flowage~~ flow of a large amount of the ~~resin~~ resinous composition can be prevented in the early stage of the low pressurizing step (STP12). In this manufacturing method, a preheating step is not required. The preheating step implies a step of maintaining a state in which a mold clamping pressure is rarely applied to the ~~resin~~

resinous composition and heating the resin composition. If the difference (Ts – T1) is excessively great, ~~a~~ the time taken for reaching the highest temperature T2 is increased. Therefore, it is preferable that the difference (Ts – T1) should be 50°C or less.

**Please amend the paragraph starting on page 9, line 18 as follows:**

~~A~~ The time taken for the low pressurizing step (STP12) is properly determined in consideration of the material of the cover 3, the thickness of the cover 3, an atmospheric temperature and the like. ~~A~~ The time taken for the low pressurizing step (STP12) is usually 1 to 6 minutes. ~~A~~ The time taken for the high pressurizing step (STP14) is properly determined in consideration of the material of the cover 3, the thickness of the cover 3, ~~an~~ the atmospheric temperature and the like. ~~A~~ The time taken for the high pressurizing step (STP12) is usually 3 to 15 minutes.

**Please amend the paragraph starting on page 9, line 27 as follows:**

The nominal thickness of the cover 3 is generally 0.3 mm to 3.0 mm. In the cover 3 having a small nominal thickness, the air residue and the bare are easily generated. By employing the manufacturing method according to the present invention, it is possible to considerably reduce ~~a~~ the defect rate when the cover 3 having a small nominal thickness is to be molded. The manufacturing method according to the present invention is suitable for manufacturing the golf ball 1 comprising the cover 3 having a nominal thickness of 0.3 mm to 1.0 mm. A regular octahedron inscribed on the phantom sphere of the golf ball is supposed and

the closest land portion 5 to each of six vertexes of the regular octahedron is determined, and the thicknesses of the cover 3 which are measured under six land portions 5 are averaged. Thus, a nominal thickness is calculated.